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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/156,394 | 09/18/1998 | MAMORU YAMADA | 0038-0294P | 1036 |

2292 7590 12/31/2008
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| EXAMINER |
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LEO, LEONARD R

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| ART UNIT | PAPER NUMBER |
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3744

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| NOTIFICATION DATE | DELIVERY MODE |
|-------------------|---------------|

12/31/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 09/156,394 | Applicant(s) YAMADA, MAMORU | |
| | Examiner Leonard R. Leo | Art Unit 3744 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-6,8-10,21 and 23-35 is/are pending in the application.
- 4a) Of the above claim(s) 25,26 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-6,8-10,21,23,24,27,28,30-32 and 35 is/are rejected.
- 7) ☒ Claim(s) 33 and 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed on October 18, 2001 has been entered. Claim 22 is cancelled, claims 2-6, 8-10, 21 and 23-35 are pending, and claims 25-26 and 29 remain withdrawn from further consideration.

The indicated allowability of claim 31 is withdrawn in view of the newly discovered reference(s) to Rudolph. Rejections based on the newly cited reference(s) follow.

Claim Objections

Claims 33-34 are objected to because of the following informalities: the recitation of “in” in line 2 should read -- is --. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21, 24, 27-28, 30-32 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Rudolph (Figures 1-6). Rudolph discloses fins 1 having collars 4 with flares corresponding to the shape of the tubes 3. Figure 6 discloses a round tube 3, wherein the flares comprise a plurality of radially extended sections connected to a plurality of curved line connecting sections, i.e. the radially extended sections and connecting sections have the same radius of curvature.

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Regarding claims 24 and 28, Figure 5 of Rudolph discloses an elliptical tube 3 with a corresponding elliptical flare having two radially extended sections with a rounded apex connected to two curved line connecting sections.

Regarding claims 30-32, the collars 4 of Rudolph are circular in shape.

Regarding claim 35, as gleaned from the drawings, the fin is formed from a single piece of material.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-6, 8-10 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rudolph in view of Togashi.

Rudolph discloses all the claimed limitations except polygon shaped flares.

Togashi (Figures 13-17) discloses a heat exchanger comprising a plurality of tubes 9 having a rectangular shape for the purpose of achieving a desired heat exchange.

Since Rudolph and Togashi are both from the same field of endeavor and/or analogous art, the purpose disclosed by Togashi would have been recognized in the pertinent art of Rudolph.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Rudolph tubes having a rectangular shape for the purpose of achieving a desired heat exchange as recognized by Togashi. In the device of Rudolph, the

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collars and flares correspond to the shape of the tube. In the modification as taught by Togashi, a rectangular tube will have a corresponding rectangular collar and flare. As disclosed in Figure 9 of Togashi, the rectangular shape of tube 9 has rounded corners (i.e. radially extended sections) and straight lines (i.e. connecting sections).

Regarding claims 3, 6, 9-10 and 23, the rectangular shape of Togashi is a tetragon.

Regarding claims 4 and 8, as disclosed in Figure 9 of Togashi, the rectangular shape of tube 9 has rounded corners (i.e. radially extended sections), which is read as an “apex or regular separation.”

Allowable Subject Matter

Claims 33-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicants' remarks with respect to the Election/Restriction are mistaken. The Election filed on January 11, 1999 provides arguments with respect to the restriction of the inventions, yet does not provide any arguments with respect to the election of species. Accordingly, claims 25-26 and 29 remain withdrawn from further consideration without traverse, because applicants did not distinctly and specifically point out the supposed errors in the restriction requirement (MPEP § 818.03(a)).

The rejections in view of Knecht et al are withdrawn.

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ Leonard R. Leo /
PRIMARY EXAMINER
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December 30, 2008